BOTANICAL GAZETTE.

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ADDITIONS TO AND CORRECTIONS OF THE "CATALOGUE OF FOREST TREES OF THE UNITED STATES."—Since the publication of the "Catalogue of Forest Trees of the United States," in 1876, several omissions and errors have been noted, which I wish to make the subject of a few notes.

The *Anona*, No. 9 of the Catalogue, has been determined as *A. glabra*, L. See Dr. Chapman in BOTANICAL GAZETTE, for January, 1878.

Several trees that had been credited to Florida were omitted in the Catalogue from an opinion that they had not been verified in many years and might have been admitted improperly. Dr. Chapman stated that *Swietenia Mahogani* L, was admitted into the Flora on the ground of some pods found on the coast by Dr. Leitner. Specimens of this tree have recently been collected by Dr. Garber at Lignum Vitæ Key, west coast of Florida. *Hibiscus tiliaceus*, L., was also collected by him at Miami, Florida. Whether it is there indigenous or only naturalized we are not informed. It is the only Malvaceous tree within our limits. At the same place Dr. Garber also collected *Scutia sarcomphala*, Bong, and *Erythrina Corallodendron*, L., the latter with a trunk 17 inches in circumference. At Lignum Vitæ Key he also collected *Drypetes coriacea*, growing from 20 to 40 feet high. On the Keys opposite Sarasola he found a species of Olive 15 to 20 feet high, growing in the wild hummocks, where, he says, it may have been introduced, but is now well established. *Terminalia Catappa*, L, and *Psidium buxifolium*, Nutt., are described as Florida trees in Nuttall's addition to Michaux's Sylva.

Dr. Garber writes us that Dr. Chapman now thinks that *Ulmus Floridana* of the Southern Flora is only a smooth form of *U. Americana* with the flowers more racemose. We are not in possession of any more information respecting *Fraxinus Curtissi*, No. 211 of the Catalogue. Dr. Gray thinks it may be a form of *F. Americana*. Since the publication of the Catalogue Prof. Watson has established a *Populus Fremontii*, a poplar of New Mexico and Arizona, which had previously been regarded as a form of *P. monilifera*.

No. 272 of the Catalogue (*Quercus Prinus*, var., *monticola*) must be omitted, as Dr. Engelmann ("The Oaks of the United States," in Trans. St. Louis Acad. Sciences) has shown it to be a typical species, and very different from any others of the White Oak group, while No. 273 he describes as a distinct species under the name of *Q. Muhlenbergii=Q. Castanea*, Muhl. He considers *Q. prinoides*, Willd., a sub-species of this, the connection of forms being found in Kansas and Nebraska, where "it bears abundantly when only 1–3, or up to 30 feet high."

Dr. Engelmann's new species, *Q. tomentella*, from the Island of Guadaloupe, off the coast of California, should be added to the Catalogue.

No. 343 of the Catalogue, *Pinus resinosa*, Ait, grows 100 to 150 feet high in the Michigan pine region, according to Prof. C. E. Bessey, of the Iowa Ag. College.

No. 364 It now appears, according to Dr. Engelmann, that the specimens growing east of the Sierras, which have usually been referred to as *Pinus Balfouriana*, Jeff., are only a form of *P. aristata*, Eng. Specimens of the true *P. Balfouriana* we have since received from the Sierras of California and Nevada, which are identical with the original Oregon specimens on which the species are founded.

No. 384, *Abies amabilis*, Dougl., it appears, must be superseded by *Abies magnifica*, Murray, certainly a very appropriate name. The remarks of Mr. Dufur, quoted under this number, probably relate to a form of *A. Douglasii*.

The specific character of No. 386, *Abies nobilis*, Lind., seems to be somewhat unsettled. Drs. Hooker and Gray incline to the opinion that *A. nobilis* and *A. magnifica* may be forms of the same species. Further investigation is much needed.

No. 387, *Abies bracteata*, Hook. The statement that it grows in Oregon, made on the authority of Gordon, is probably a mistake. It is only positively known from the Santa Lucia Mountains, in Southern California.

No. 402, *Cupressus MacNabiana*, Murr. I had received under this name, from the coast range north of San Francisco, specimens of a *Cupressus* which was said to grow 50 to 100 feet high. I think it is the same which was described as a new species by Mr. Begg, of California, and at a meeting of the Philadelphia Academy of Science in 1876. My specimens are decided by Prof. Watson to be *C. Goveniana*, Gordon, which he thinks may be only a form of *C. macrocarpa*. Gordon describes both *C. MacNabiana* and *C. Goveniana* as only bushes 6 to 10 feet high. Probably one or two more California specimens of *Cupressus* may yet claim a place in the Catalogue.

No. 408, *Juniperus Virginiana*, var., *Bermudiana*. This variety according to Dr. Engelmann is not *J. Bermudiana*, L., which is a little known species of the Bermudas and other West Indian Islands.

No. 411, *Juniperus occidentalis*, var., *Texana*, is what Dr. Engelmann doubtfully calls var. *conjugans*. To me it appears more like a variety of *J. Virginiana*, but very possibly may be a distinct species

Juniperus pachyphlœa, Torr., must be added to the Catalogue. A fine wood section of this species was received from Dr. Palmer (collected in Arizona) after the Catalogue was published. It is very different in some characters from any other Juniper of our country.

Thrinax Garberi, Chap., must be added to the Catalogue. Found in rocky, pine woods near Miami, Southern Florida, by Dr. Garber, in 1877. See BOTANICAL GAZETTE, February, 1877.—GEORGE VASEY.

CASSIA NICTITANS.—This, in these parts common little annual, is now (October 15 dead—dry plants, covered with seed-pods are all we can find. To-day I came across a patch by the railroad, which the track-hands had mowed off early in the season. These had some dry pods from the early flowers, but a new growth came out after the mowing, and these plants were yet green, and flowering profusely.

Having had occasion to watch this plant very closely last summer on account of directions for my artist, I noticed that wherever fertilization was not accomplished the flowers wholly withered away, as is common in most plants. In these October flowers I find a large number form only a calyx and gynœcium having but imperfect stamens and no petals. Some produce petals, but these remain closed, and the stigma protrudes like a green pin-head on the mass of orange yellow. In many of these cases the anthers are polleniferous, but the closed petals seem to prevent any contact of pollen with the stigma. I can find no trace of pollen on any of the stigmatic surfaces. In the normal summer flowers the ovarium is quite large before the sepals and petals fall. In these they are extremely small when the floral envelopes have disappeared, and remind one very much of the appearance of cleistogenous flowers of Amphicarpœa or Impatiens, and like these they evidently go on and perfect their capsules, but unlike the true cleistogene flower, produce no seeds. In none of the capsules apparently formed in this way could I find a single seed.

The interesting lesson is that while under some circumstances the ovarium no more than the seed can be perfected without pollenization; under others the one may be